

REMARKS

In view of the following remarks, reconsideration of the rejections contained in the Office Action of April 28, 2010 is respectfully requested.

Claims 25-44, including independent claims 25 and 36, are presently pending in this application. In this regard, independent claim 25 is directed to the sub-combination of a radially deformable endovascular prosthesis. Independent claim 36 is directed to the combination of a kit for treating a blood vessel, which comprises a radially deformable endovascular prosthesis including all of the limitations of independent claim 25. In the outstanding Office Action, the Examiner rejected independent claim 25 and several of the dependent claims as being unpatentable over the Berg '048 reference (USP 6,451,048) in view of the Goldsteen reference (USP 5,976,178), and further in view of the Berg '713 reference (USP 6,994,713). In addition, the Examiner rejected independent claim 36 and several of the dependent claims as being unpatentable over the Berg '048 reference in view of the Goldsteen reference and the Berg '713 reference, and further in view of the Perez reference (USP 6,984,244). The remaining dependent claims were rejected in view one of the above combinations of references along with the Schwartz reference (USP 5,443,496). However, these rejections are traversed. For the reasons discussed below, it is respectfully submitted that claims 25-44 are clearly patentable over the prior art of record.

A detailed discussion of the arrangement of the external hooks and the lattice as recited in each of independent claims 25 and 36 was conducted with the Examiner during the interview of December 1, 2009, and a further explanation was provided in the Remarks submitted with the response filed January 15, 2010. Therefore, the same detailed discussion will not be provided below, and instead the Examiner is requested to review the specification and the previously-filed Remarks submitted January 15, 2010 for any questions regarding the detailed arrangement.

However, the Applicant would like to note the following features from the independent claims, illustrated in Figures 1, 2, 3A, 4A, and 5A of the present application. In particular, independent claims 25 and 36 both require at least two hooks 18 that are connected to wires of a lattice 12 at opposite sides of one of the meshes of the lattice 12 such that:

- (1) the at least two hooks 18 cross each other (see Fig 2);
- (2) one of the meshes of the lattice 12 has a first shape when the lattice 12 is in the retracted state so that the at least two hooks 18 of the clamp are in a spaced-apart position (see Fig 3A); and
- (3) the same one of the meshes has a second shape when the lattice 12 is in an expanded state so that the two hooks 18 of the clamp are in a close-together position (see Fig 5A).

The structural arrangement as noted above allows the radially deformable endovascular prosthesis to automatically engage (clamp onto) the external tissue of a blood vessel so as to securely hold the prosthesis in proper position once the prosthesis is deployed (see Figure 5A). Therefore, no external fasteners, stitches, or other devices are necessary to allow the prosthesis to clamp securely to the blood vessel.

The primary Berg '048 discloses a wire connector structure for tubular grafts, including wires 40, 44 forming connectors ("hooks") 34 with a crook portion 52 on the end thereof. As illustrated in Figures 10a-10c and described in column 6, lines 4-32, the wires 40, 44 form a "forward hook" 40 and a "rear hook" 44, and these hooks are initially held against the graft 30 by a sheath 60 so as to extend in opposite axial directions (see Figure 10a). The graft 30 is then inserted into a hole 64 in a body organ tubing wall (i.e., a blood vessel) 66, and the sheath 68 is partially retracted. This allows the forward hook 40 to be exposed and released inside the blood vessel, and to assume a normal radial position so that the crook portion 52 of forward hook 40 becomes imbedded in the inner surface of wall 66 (see Figure 10b). Subsequently, the sheath 68 is further retracted so as to allow the rear hook 44 to be exposed and released so as to also assume a normal radial position with its crook portion 52 embedded in the outer surface of wall 66 (see Figure 10c). As the Examiner acknowledged, however, the primary Berg '048 reference does not teach or even suggest lattice and two external hooks arranged as recited in features (1)-(3) noted above. Therefore, the Examiner attempted to correct these deficiencies using the Goldsteen reference and the Berg '713 reference.

Firstly, the Examiner asserted that the Goldsteen reference teaches an elastic frame (lattice) 432 which can be "stretched to a small fraction of its original diameter," as noted in column 12, lines 37-38. Therefore, the Examiner concluded that the Goldsteen reference

provides the necessary teaching to allow one of ordinary skill in the art to modify the Berg '048 reference "to allow the lattice to stay open and be distensible so that it may pulsate like natural circulatory system tubing in response to pressure waves in the blood flow." However, the combination of the Berg '048 reference and the Goldsteen reference does not teach or even suggest connecting hooks to the wires of the lattice at opposite sides of one of the meshes of the lattice in the manner required by any of items (1)-(3) noted above. In particular, the Goldsteen reference does not teach *any* hooks, and therefore does not teach hooks that *cross each other*, as required in item (1) mentioned above.

Furthermore, the Goldsteen reference does not teach any hooks connected to the wires of the lattice (frame) 432. Therefore, the Goldsteen clearly does not teach that the lattice and the hooks are configured to achieve the configurations specifically required in items (2) and (3) mentioned above and recited in each of independent claims 25 and 36. In other words, the combination of the Goldsteen reference and the Berg '048 reference is completely silent about the connection of the hooks to wires of a lattice in such a way that the hooks can move between a spaced-apart position when the lattice is in a retracted state and a closed position when the lattice is in an expanded state. Therefore, one of ordinary skill might learn from the combination of the Goldsteen reference and the Berg '048 reference that the hooks should be attached to the wires of the lattice so that the hooks are actually located *closer together in a retracted state of the frame*, which is completely contrary to the requirements of independent claims 25 and 36.

The Berg '713 reference teaches a component including a medial portion 16 and fingers 14 extending in an axial direction from each end of the medial portion 16, as illustrated in Figure 3. The Examiner is apparently taking the position that fingers 14 correspond to the hooks as recited in independent claims 25 and 26. Furthermore, the Examiner noted that the fingers 14 extending from axially opposite ends of the medial portion 16 can be deflected so that their free ends overlap, as illustrated in Figure 17 (see column 9, lines 1-8). Therefore, it is apparently the Examiner's position that the Berg '713 reference teaches one of ordinary skill in the art to modify the Berg '048 reference to provide hooks which cross each other, as required by independent claim 25 (item (1) noted above). However, the Applicant strongly disagrees.

In particular, as noted above, the Berg '048 reference teaches forward and rear hooks 40, 44 which are axially spaced apart from each other so that the forward hook 40 can be inserted *inside* the tube so as to engage the *inner surface* of wall 66, while the rear hook 44 can engage

the *outer* surface of wall 66. If one of ordinary skill in the art attempted to modify the hooks 40, 44 of the Berg '048 reference based on the teaching illustrated in Figure 17 of the Berg '713 reference, the wire connector structures (wires 40, 44) of the Berg '048 would be rendered completely useless. In particular, the "hooks" 40, 44 of the Berg '048 reference could not be crossed and still properly engage opposite surfaces of the tubing wall as required according to the Berg '048 reference. It is well established that if a proposed modification renders the prior art invention being modified unsatisfactory for its intended purpose, then there would be no reason for one of ordinary skill in the art to make the proposed modification. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Because the Examiner's proposed modification of the Berg '048 reference using the teaching in the Berg '713 reference would clearly render the invention in the Berg '048 reference unsatisfactory for its intended purpose, it is submitted that there is no reason for one of ordinary skill in the art to make the Examiner's suggested modification to obtain the feature of item (1) noted above.

Furthermore, there is no teaching in the Berg '713 reference to arrange the hooks (fingers) 14 with respect to the lattice of the Berg '048 reference (or the "lattice" 432 of the Goldsteen reference) so as to teach the features in items (2) and (3) noted above. In particular, the Berg '713 reference provides no teachings regarding locating hooks so that when a lattice is in a retracted state, the two hooks will be in a spaced-apart position, and when the lattice is in the expanded state, the hooks will be in a close-together position.

As explained above, the Goldsteen reference and the Berg '713 reference clearly do not correct the deficiencies in the Berg '048 reference which were acknowledged by the Examiner. In fact, the Berg '713 reference cannot even be combined with the Berg '048 as suggested by the Examiner. Furthermore, the Perez reference and the Schwartz reference also do not suggest the missing features so as to correct the deficiencies in the Berg '048 reference. Therefore, for these reasons, it is respectfully submitted that independent claims 25 and 36 are clearly patentable over the prior art of record.

In addition to the above distinctions, it is submitted that independent combination claim 36 recites additional features further distinguishing the present invention from the prior art. In particular, independent claim 36 requires a lattice delivery tube defining a confinement duct in which the lattice is confined in the retracted state. In addition, independent claim 36 also

requires a *retaining device* for holding the lattice in the retracted state at the clamp. The retaining device is configured to *maintain the clamp open* by tightening the one of the meshes carrying the at least two hooks, and the retaining device is separate from the lattice delivery tube such that *the lattice is releasable* from the lattice delivery tube to assume the expanded state *while the one of the meshes carrying the at least two hooks remain tightened*.

The Examiner applied the Perez reference as teaching the above-noted additional features recited in independent claim 36. In particular, the Examiner stated that the Perez reference teaches a capsule 333 which retains a “lattice” (repair device) 390 to prevent deployment of the repair device 390. Furthermore, a delivery tube 320 restricts the repair device from deployment and presses hooks 96 into grooves 376. The hooks are free to embed in the vasculature once the capsule and sheath assembly are retracted. However, it is submitted that the Perez reference does not teach a *retaining device* as required by independent claim 36.

The device of the Perez reference is intended to release a prosthesis having hooks 410 at a first end (see Figure 16). The sheath assembly 340 is initially retracted in order to release a part 392 of the prosthesis located at an end opposite the hooks 410. The hooks 410 then remain locked between part 333 of the main catheter 330 and the inner catheter 320. The main catheter 330 is then retracted in order to release the hooks 410 *along with the rest of the prosthesis* (i.e., the hooks 410 are released at the same time the lattice 398 is released). The hooks 410 cannot be retained after the lattice is released. Therefore, the Perez reference does not teach or even suggest a retaining device separate from a lattice delivery tube such that the lattice is releasable from the lattice delivery tube to assume an expanded state *while the one of the meshes carrying the at least two hooks remains tightened by the retaining device*, as required by independent claim 36.

The remaining prior art of record, including the Berg ‘048 reference, the Goldsteen reference, the Berg ‘713 reference, and the Schwartz reference also does not teach or even suggest a retaining device as recited in independent claim 36. Therefore, in addition to the reasons discussed above, it is submitted that independent claim 36 is further distinguishable from the prior art.

In view of the above remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted,

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